1 Advertisement

Post Title: Research Fellow in Sensor Technology
School/department: School of Engineering and Informatics - Department of Engineering and Design - Sensor Technology Research Centre
Hours: full time
Requests for flexible working options will be considered (subject to business need).
Contract: fixed term until 31.10.2021
Reference: 5217
Salary: Starting at £33,797 to £40,322 per annum, pro rata if part time
Placed on: 18 December 2020
Closing date: 20 January 2020 Applications must be received by midnight of the closing date.
Expected Interview date: First week in February 2021
Expected start date: 1 March 2021

The Sensor Technology Research Centre at the University of Sussex is looking for a part time hardware developer to work with Dr Niko Münzenrieder and Dr Daniel Roggen on the research-intensive project "Shape sensing textile for orthotics - SmartSensOtics".

This project aims to develop a textile sleeve with an integrated array of stretchable sensors. The goal is to quantify the shape and the pressure applied to body parts covered with the textile sleeve, and hence to offer a digital alternative to traditional plaster cast molds.

Your role will be to develop and fabricate highly deformable electronic strain sensors using thin-film technology and various elastomers. This will be done in our in-house fabrication facilities. In addition to the realization of single sensors devices, sensor arrays should be fabricated and integrated into textiles. Finally, the mechanical and electrical properties of the devices and circuits have to be characterized using appropriate conditioning methods.

This project is based at the Sensor Technology Research Centre at the University of Sussex.

Key Requirements. This post is well suited to a highly motivated individual with excellent technical skills, significant experience in the design, fabrication, characterization, and application of flexible sensor devices, as well as a willingness to operate in a dynamic research environment within an international team.

Candidates should have a PhD (or will shortly be assessed for a PhD) in mechatronics, physics, electronics engineering or an equivalent field combining, and a very strong background in sensors, thin-film technology, cleanroom processing, 3D printing, and ideally Smart textiles.

An established expertise in the application of research outcomes in the healthcare sector is
desirable. The candidate should have a strong interest in the development and fabrication of novel electronics and their unobtrusive integration into epidermal systems and body worn devices. If the situation allows, the activities will also include at least one trip to our collaborators in Kenya.

**Background.** The Sensor Technology Research Centre at the University of Sussex works on the interface between electrical engineering, computer science, and physics to develop advanced and innovative sensor systems for applications in sports, healthcare, or wearable electronics.

**Advantages and career development.** This part time position is ideally suited for somebody who wants to broaden his/her knowledge in the application of sensors in wearable and flexible electronics to support patients and professionals in the healthcare sector.

Please contact Niko Münzenrieder (n.s.munzenrieder@sussex.ac.uk) for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.

For full details and how to apply see our [vacancies page](#).

The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.

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2. **The School / Division**

Please find further information regarding the school/division at [www.sussex.ac.uk/engineering](http://www.sussex.ac.uk/engineering)

3. **Job Description**

Job Description for the post of: Research Fellow in Sensor Technology

**Department:** Department of Engineering and Design

**Section/Unit/School:** School of Engineering and Informatics

**Location:** Sensor Technology Research Centre

**Grade:** 7.0

**Responsible to:** Principal Investigator through to Head of School

**KEY RESPONSIBILITIES**

1. **Research, Scholarship & Enterprise**
2.1 Contribute to research projects in collaboration with others.

2.2 Analyse and interpret findings and draw conclusions on the outcomes.

2.3 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.

2.4 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.

2.5 Continually update knowledge and understanding in field or specialism and engage in continuous professional development.

2. Teaching & Student Support

2.1 Undertake teaching duties, if required.

2.2 Assist in the assessment of student knowledge and supervision of student projects if required.

3. Contribution to School & University

3.1 Attend and contribute to relevant School and project meetings.

3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. Role-specific duties

4.1 Develop deformable sensors for strain, pressure, and other modalities.

4.2 Design and fabricate polymer substrates for deformable sensors with tailored mechanical, chemical, and electrical properties.

4.3 Use thin-film technology, cleanroom processing, and 3D printing to fabricate sensors.

4.4 Integrate sensors into textiles.

4.5 Evaluate the mechanical and electrical performance of the developed devices and systems.

4.6 Build wearable sensor systems based on flexible sensors, and sensor arrays.

4.7 Support a potential commercialization of the developed technologies.

4.8 Publish scientific results in high quality journals and present your work at international conferences.

4.9 Generate innovation ideas which may result in patents.

4.10 Exchange expertise with PhD students and colleagues.
4.11 Collaborate with the industrial partners, generate deliverables and reports and assist with flow of information among stakeholders.

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

INDICATIVE PERFORMANCE CRITERIA

- A completed PhD, (or being in the final phase of the PhD studies) in mechatronics, physics, or electronics engineering.
- Experience with thin-film technology, cleanroom processing.
- Initiating, developing or participating in links between the University and external bodies such as business and industry, the professions, community organizations and policy-makers.
- Experience with thin-film technology, and thin-film transistors and circuits.
- An excellent track record of relevant scientific publications
- Experience with oxide semiconductors.
- Experience with electronic sensors and sensor readout systems.
- Experience with flexible electronics.
- Experience in the electrical and mechanical characterization of devices.

4. Person Specification

ESSENTIAL CRITERIA

1. Educated to MSc or doctoral level, or other equivalent qualification, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality research activity.
3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.
8. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA
1. A degree in mechatronics, physics, or electronics engineering.
2. Experience in the fabrication and characterization of deformable mechanical structures.
3. Experience in the design and fabrication of thin-film transistors, and with oxide semiconductors.
4. Experience with semiconductor processing, cleanroom processing and thin-film technology.
5. Experience with flexible electronics, and strain/pressure sensors.
6. Experience of writing high-quality technical reports and publications.

DESIRABLE CRITERIA
1. Experience of generating research or knowledge exchange income.
2. Experience with, liquid metals, or smart textiles